

PARASITES OF WESTERN AUSTRALIA  
XI  
ATOPOMELIDAE FROM MARSUPIALS  
(ACARI: LISTROPHOROIDEA)

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&

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ABSTRACT

Twenty-three species of atopomelid fur-mites belonging to 11 genera are recorded from Australian marsupials: *Austrochirus perameles* Fain, *A. armatus* Fain, *A. dorreensis* sp. nov., *Dasyurochirus trouessarti* (Domrow), *D. sminthopsis* (Womersley), *D. sminthopsis leucopus* subsp. nov., *D. intercalatus* Fain, *D. longissimus* sp. nov., *D. longicaudus* sp. nov., *D. australis* Fain, *D. tapoatafa* sp. nov., *D. granulipes* sp. nov., *Neodasyurochirus squamatus* Fain, *Labidopygus squamatus* sp. nov., *Scolonoticus medius* Fain, *S. quasi-nudus* sp. nov., *Petaurobia australiana* sp. nov., *Campylochirus* (*Campylochirus*) *brevicepsicola* sp. nov., *Campylochirus* (*Campylochiroides*) *petauricola* Fain, *Cytostethum* (*Metacytostethum*) *tasmaniense* Fain & Domrow, *Notoryctobia notoryctes* gen. nov., sp. nov., *Murichirus petaurus* sp. nov., *M. notomys* Fain, *Listrophoroides* (*Marquesania*) *queenslandicus* Womersley.

Among this material one new genus, 11 new species and one new subspecies are described and figured.

INTRODUCTION

This paper deals with a collection of atopomelid mites, partly collected by F.S.L. on marsupials from Western Australia during an expedition to the Kimberley Region of Western Australia in 1976-77. We also add some mites found by F.S.L. or by A.F. on Australian marsupials in several institutions.

The types of species found on mammals in the Western Australian Museum Perth, or during the Kimberley expedition are deposited in that museum. Those found on Australian mammals conserved elsewhere in other institutions are deposited in the respective museums.

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The length of the body includes the gnathosoma, the width is the maximum width of the body.

Abbreviations utilized for the institutions: BM (British Museum, Natural History, London); DZUN (Department of Zoology, University of Nijmegen, The Netherlands); FMNH (Field Museum, Natural History, Chicago); HM (Hamburg Museum of Natural History, Germany); IMT (Institute of Tropical Medicine, Antwerp); IRSNB (Institut royal des Sciences naturelles, Brussels); MHNP (Muséum d'Histoire Naturelle, Paris, France); Rijksmuseum (Rijksmuseum Natural History, Leiden, The Netherlands); USNM (United States National Museum, Washington D.C.); WAM (Western Australian Museum, Perth).

## SYSTEMATICS

Family Atopomelidae Gunther, 1942

Genus *Austrochirus* Womersley, 1943

Subgenus *Austrochirus* Womersley, 1943: Fain, 1972

### 1 *Austrochirus perameles* Fain, 1971

This species was previously known from *Perameles* sp. (type host), Australia and from *Perameles moresbyensis*, New Guinea.

Our specimens were collected on *Perameles* sp., New South Wales, (nine females, one male, 10 nymphs) (animal in USNM 23241).

### 2 *Austrochirus armatus* Fain, 1972

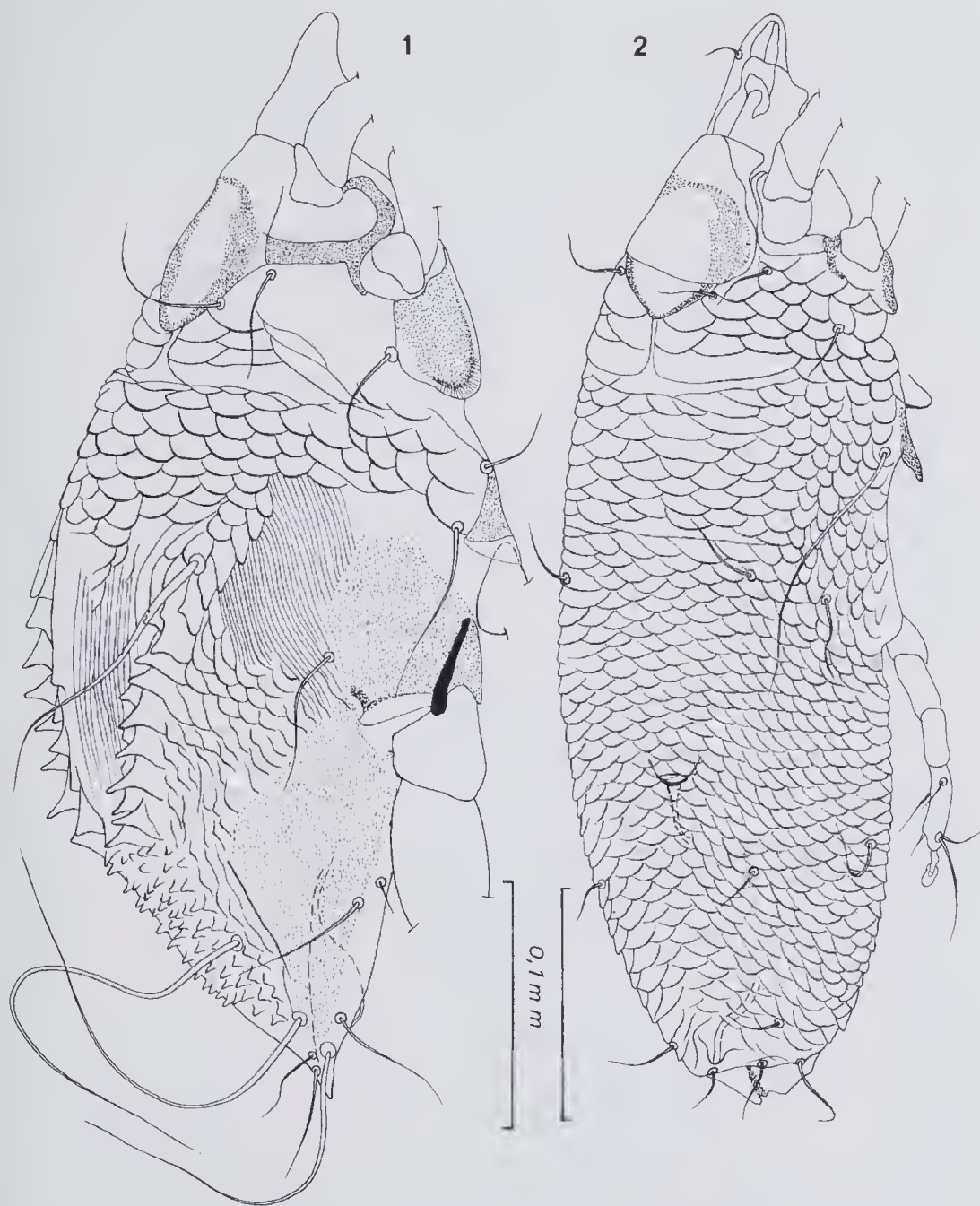
We attribute to this species a series (four females, two males, 20 nymphs, some containing a male in moulting stage) collected from *Isoodon obesulus* (previously *Perameles obesula*), (animal in USNM 218008, locality unknown).

The male corresponds closely to *A. armatus*. The female of the species was unknown. It resembles that of *A. squamatus*, being also covered by scales, though these are triangular, not rounded; the shape of the postscapular shield is different and the small Y-shaped sclerite is absent in our specimens. The size of two females is 480  $\mu\text{m}$  x 150  $\mu\text{m}$  and 485  $\mu\text{m}$  x 158  $\mu\text{m}$ .

### 3 *Austrochirus dorreensis* sp. nov.

#### Diagnosis

The female of this species resembles *A. squamatus* except that the Y-shaped sclerite situated behind the postscapular shield is lacking. The male is clearly distinguished by the presence on the dorsum of unequal scales, some being very large.



Figs 1-2: *Austrochirus dorreensis* sp. nov. 1—Holotype male; 2—Allotype female.



Fig. 3: *Austrochirus dorreensis* sp. nov. Holotype male, posterior half in ventro-lateral view.

## Description

**Holotype:** male (Figs 1, 3) 435  $\mu\text{m}$  x 180  $\mu\text{m}$  (in lateral view). Hysteronotum scaly except small median area striated. This striated area is flanked laterally by one or two longitudinal rows of very strong erect scales. There is a pair of large lateral opisthosomal shields. Penis small, situated between legs IV. With two very small, rounded adanal suckers. Legs IV strongly inflated.

**Allotype:** female (Fig. 2) 465  $\mu\text{m}$  x 140  $\mu\text{m}$ . Dorsal surface close to *A. squamatus* except that Y-shaped sclerite is missing and that copulatory papilla is larger. Ventral surface and legs not separable from *A. squamatus*.

## Material examined and host information

**Holotype:** WAM 80-342, parasitic on *Perameles bougainville* Quoy & Gaimard, 1824, collected at Dorre I., Western Australia (25°06'S, 113°06'E), 16 November 1963. Host registration WAM M11337.

**Paratypes:** from the same animal as holotype, WAM 80-343 and 80-196, 197, one female, three nymphs; FMNH, one male, one female, three nymphs; IMT, one male, one female, three nymphs; DZUN, one female, three nymphs.

Genus *Dasyurochirus* Fain, 1970

Subgenus *Dasyurochirus* Fain, 1970

### 1 *Dasyurochirus trouessarti* (Domrow, 1961)

This species was previously known from several dasyurids in Australia (*Antechinus flavipes godmani*, *A. flavipes* and *Dasyurus hallucatus*). F.S.L. found three males and four females on *Antechinus* sp. from Sydney, New South Wales, in the Hamburg Museum. Another female specimen was discovered on *Antechinus flavipes* (Waterhouse, 1838) from Australia (host in Leiden museum).

### 2 *Dasyurochirus sminthopsis* (Womersley, 1954)

This species was previously known from *Sminthopsis crassicaudata* (type host), *S. leucopus* and *S. murina* (see Fain, 1972) (Figs 4-5).

We found new specimens on the following hosts:

- 1 *Sminthopsis crassicaudata* (Gould, 1844), from 'Australia', March 1884 (10 females and two males, host in RMNH. From South Australia, 9 February 1898 (five females and one male), host in HM T635. From Bolgart, Australia, 25 May 1963 (14 females, 15 males, six nymphs), host in WAM 7795.

2 *Sminthopsis murina* (Waterhouse, 1838), 'Australia', 18 December 1884 (four females and two males), host in RMNH.

*Dasyurochirus sminthopsis leucopus* subsp. nov.

Diagnosis

This new subspecies differs from the typical form by the following characters. In both sexes the postscapular shields lack the anterior sclerotized band, only the posterior sclerotized band being present. In the female the copulatory papilla is shorter and inconspicuous and the distal tubuli of the sclerite between bursa and spermatheca are shorter.

Description

Holotype: female (Figs 6-7) 414  $\mu\text{m}$  x 120  $\mu\text{m}$  (in ventral view). Morphology as in *D. sminthopsis* except for the characters mentioned above.

Male: the only specimen is in bad condition and crushed. General characters as in *D. sminthopsis*.

Material examined and host information

Holotype: WAM 80-345, parasitic on *Sminthopsis leucopus* (Gray, 1842), collected at Western Port, Victoria, 5 December 1974 (coll. P. Wooley). Host registration WAM M12947.

Paratypes: from the same animal as holotype, WAM 80-204 and 205, five females; FMNH, five females, one male; IMT, five females; DZUN, five females.

3 *Dasyurochirus intercalatus* Fain, 1972

The only known host previously for this species was *Sminthopsis murina*, from Albany, Western Australia.

Three female and one male specimens were collected by F.S.L. on *Antechinus flavipes* from an unknown locality in Australia, March 1884, host in RMNH 716.

The male resembles *D. trouessarti*, being 315  $\mu\text{m}$  x 120  $\mu\text{m}$  (in ventral view).

4 *Dasyurochirus longissimus* sp. nov.

Diagnosis

The holotype is lacking gnathosoma and the legs I-II. The species is however clearly distinguished from all the other species in the genus by the

great elongation of the body and the presence on it of very numerous and small scales.

### Description

**Holotype:** female (Fig. 8) (ovigerous) 460  $\mu\text{m}$  long (from anterior extremity of prescapular shield to the tip of the short copulatory tube) and 90  $\mu\text{m}$  side. There are two prescapular and two postscapular shields rather well sclerotized and distinctly separated in midline. Behind these shields there are nine transverse not scaly striations. Hysterosoma completely covered with small rounded scales. Opisthosoma 290  $\mu\text{m}$  long. Legs small. Copulatory tube terminal, small. Vulva distinctly ventral.

### Material examined and host information

**Holotype:** HM A73/78, parasitic on *Acrobates pygmaeus* (Shaw, 1793), collected in Queensland, 11 July 1893. Host registration HM T657.

**Paratypes:** from the same animal; HM, one nymph; IMT, one female.

## 5 *Dasyurochirus longicaudus* sp. nov.

### Diagnosis

This species is close to *D. trouessarti* (Domrow, 1961). The female, however, is distinguished from that species by the shape of the copulatory tube which is longer and narrower.

### Description

**Holotype:** female (Fig. 9) 385  $\mu\text{m}$  (copulatory tube not included) x 150  $\mu\text{m}$  (in lateral view). Propodosomal shields, dorsal striations and scales as in *D. trouessarti*. Copulatory tube 73  $\mu\text{m}$  x 6  $\mu\text{m}$ .

**Allotype:** male 310  $\mu\text{m}$  x 105  $\mu\text{m}$  as in *D. trouessarti*. Lateral shields of opisthosoma 105  $\mu\text{m}$  long. Legs IV stronger than legs III.

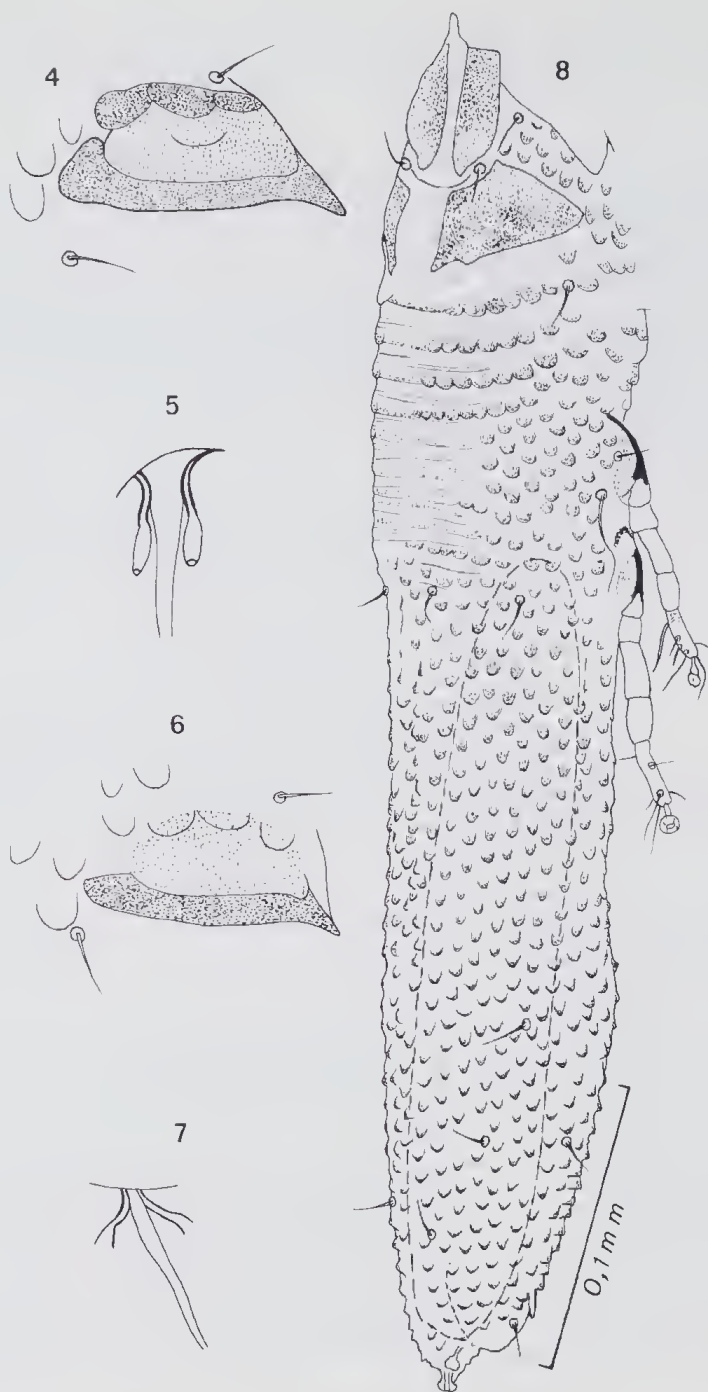
### Material examined and host information

**Holotype:** USNM 3936, parasitic on *Phascogale godmani* Thomas, 1923, collected at Atherton Tableland, Queensland (approximately 17°16'S, 145°29'E), 30 July 1921. Host registration USNM 238575.

**Paratypes:** from the same animal as holotype, USNM, one female and two males; IMT, one female and one male; DZUN, one female and one male.

## 6 *Dasyurochirus australis* Fain, 1972

This species was known from *Antechinus minimus* (Geoffroy, 1803) (type host), Tasmania (animal in BM 52.1.15.5.7) and *A. unicolor*, New South Wales (animal in BM 26.3.11.268-76) (Fain, 1972).



Figs 4-8: Figs 4-5: *Dasyurochirus* (*Dasyurochirus*) *sminthopsis* (Womersley): 4—Post-scapular shield; 5—Internal extremity of bursa. Figs 6-7: *Dasyurochirus* (*Dasyurochirus*) *sminthopsis leucopus* subsp. nov. 6—Postscapular shield; 7—Internal extremity of bursa copulatrix. Fig. 8: *Dasyurochirus* (*Dasyurochirus*) *longissimus* sp. nov. Holotype female in lateral view.

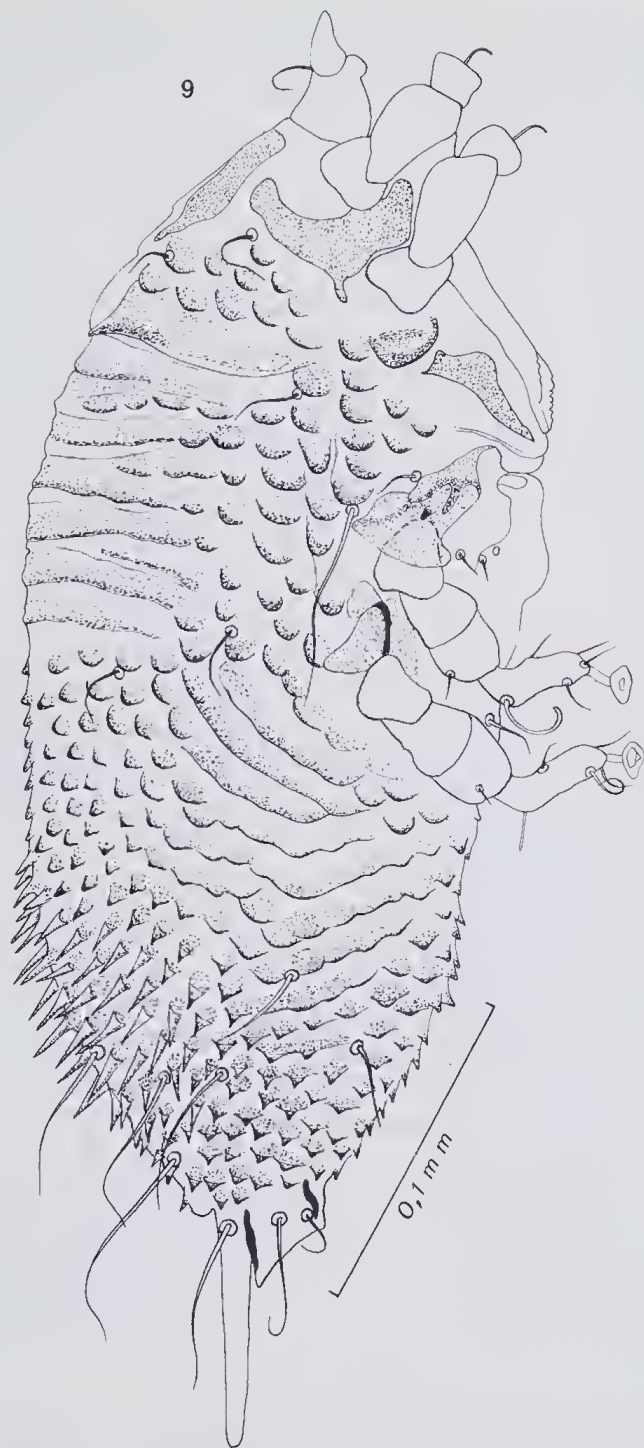


Fig. 9: *Dasyurochirus* (*Dasyurochirus*) *longicaudus* sp. nov. Holotype female in lateral view.

New specimens were found by F.S.L. on the following hosts:

- 1 On typical host, Perkins I., Tasmania, 3 May 1921 (16 females and 10 males). Host registration USNM 238574.
- 2 On *Antechinus stuartii* Macleay, 1841, Western Port, Victoria, 23 April 1974 (37 females, five males and 11 nymphs). Host registration WAM M12797 (coll. P. Wooley).
- 3 On *Antechinus flavipes*, Upper Allyn, 1 November 1957 (eight females and three nymphs). Host registration WAM 4689 (coll. P. Marto).
- 4 On *Antechinus flavipes burelli*, Ebor, New South Wales, 5 February 1921 (one female). Host registration USNM 237909.
- 5 On *Phascogale calura* Gould, 1844, Lake Grace, Western Australia (33°06'S, 118°28'E), 16 December 1960 (four females and one male). Host registration WAM M6163 (coll. D.G. Bathgate).

### 7 *Dasyurochirus tapoatafa* sp. nov.

#### Diagnosis

This species is close to *Dasyurochirus australis* Fain. It differs from it in the female by the greater number of scales on the opisthogaster. These scales are disposed in a continuous median band formed of transverse rows of 4-5 scales each. This band is fused laterally to larger scaly areas. The opisthogaster bears only a few poorly developed transverse striations (not figured).

#### Description

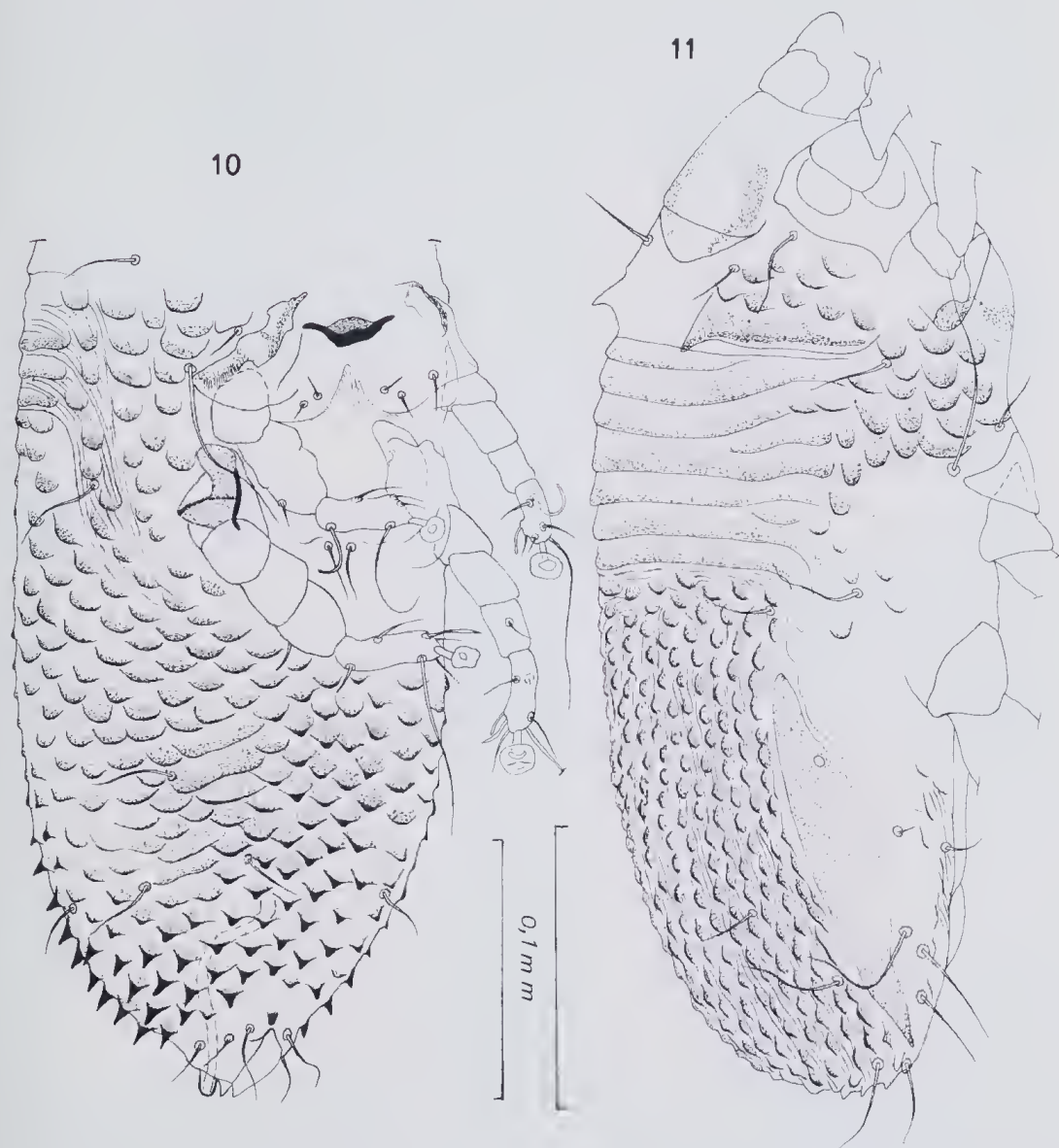
**Holotype:** female (Figs 10-11) 450  $\mu\text{m}$  x 160  $\mu\text{m}$ . Propodosma as in *D. australis*. Hysteronotum completely covered with scales, small and rounded in anterior half and longer and more pointed in posterior half. Opisthogaster with anterior portion immediately behind *gp* setae finely striated but without scales, behind this area opisthogaster is completely scaly. Copulatory papilla cylindrical, thick, 15  $\mu\text{m}$  long.

**Allotype:** male (Fig. 11) 375  $\mu\text{m}$  x 150  $\mu\text{m}$ . Propodosoma as in female. Hysterosoma: dorsum covered with small, narrow and rounded scales, except on the sides which bear two triangular shields 140  $\mu\text{m}$  x 30  $\mu\text{m}$ . Anus surrounded by ellipsoidal ring 66  $\mu\text{m}$  long; anal area with two genital discs. Legs III-IV rather strong, IV more inflated than III. Penis curved, short (15-18  $\mu\text{m}$  long).

#### Material examined and host information

**Holotype:** WAM 80-326, parasitic on *Phascogale tapoatafa* (Meyer, 1793), collected at Mahogany Creek, Western Australia (31°54'S, 116°08'E), 12 December 1974. Host registration WAM M12506.

Paratypes: collected from the same animal as holotype, WAM 80-327, 80-245 and 80-246: allotype male, four females and four nymphs; FMNH, four females, one male, four nymphs; IMT, four females and one male; DZUN, four females and three nymphs.



Figs 10-11: *Dasyurochirus (Dasyurochirus) tapoatafa* sp. nov. 10—Holotype female; 11—Allotype male.

## 8 *Dasyurochirus granulipes* sp. nov.

In the female of this new species the opisthosoma bears two lateral shields as in *D. biscutatus* Fain, but these shields are more than twice as long and much wider than in this species.

Holotype: female (Figs 12-13) 340  $\mu\text{m}$  x 88  $\mu\text{m}$  (in oblique view). Post-scapular shields large and with two dark bands as in *D. biscutatus*. With 7-8 transverse unscaled and relatively wide striations in midline behind post-scapular shields. Anterior part of hysterosoma with small scales only in median region, lateral parts being striated. Opisthosoma with two large lateral shields, 100-110  $\mu\text{m}$  x 35-40  $\mu\text{m}$ . Opisthogaster covered with small scales. Legs III-IV relatively long.

Allotype: male 330  $\mu\text{m}$  x 90  $\mu\text{m}$  (in dorsoventral view). Propodosoma as in female. Hysterosoma: dorsum scaly; on each side with a large shield (90-105  $\mu\text{m}$  x 30  $\mu\text{m}$ ) that is punctate and strongly attenuated anteriorly. Anus 45  $\mu\text{m}$  from posterior extremity. With two genital discs inside an ellipsoidal poorly sclerotized ring 45  $\mu\text{m}$  long. Penis thick and short (18  $\mu\text{m}$  long). Legs III-IV strong, slightly unequal, IV slightly thicker than III.

### Material examined and host information

Holotype: WAM 80-322, parasitic on *Sminthopsis granulipes* Troughton, 1932, collected at Lake Grace, Western Australia (33°06'S, 118°28'E) 10 March 1973. Host registration WAM 10205.

Paratypes: collected from the same animal, WAM 80-323, 80-298 and 80-249, two males and three females, three nymphs; FMNH, three females, one male and two nymphs; IMT, three females, one male, only nymph; DZUN, three females, one male and eight nymphs.

### Genus *Neodasyurochirus* Fain, 1972

#### *Neodasyurochirus squamatus* Fain, 1972

This species was previously known only from the type host, *Antechinus flavipes*, Australia (exact locality unknown).

New specimens were found by F.S.L. on the following hosts:

- 1 *Antechinus flavipes*, locality unknown (one female and one male). Host in RMNH.
- 2 *Phascogale swainsoni* Waterhouse, 1840, south-western Australia (one female). Host in MHNP.
- 3 *Phascogale* sp., Peak Downs, Australia (four females). Host in HM.



Figs 12-13: *Dasyurochirus* (*Dasyurochirus*) *granulipes* sp. nov. Holotype female in ventrolateral (12) and dorsolateral (13) view.

## Genus *Labidopygus* Fain & Domrow, 1973

This genus was previously known only by the type species *L. australiensis* Fain & Domrow, 1973 described from *Dasyurus maculatus* (Kerr), in New South Wales.

### *Labidopygus squamatus* sp. nov.

#### Diagnosis

This species is clearly distinguished from the typical species by the presence of numerous scales on the dorsum of the body.

#### Description

**Holotype:** male (Figs 14-15) 285  $\mu\text{m}$  x 120  $\mu\text{m}$  (in lateral view). With median prescapular shield. Postscapular shield absent. Cuticle behind prescapular shield scaly except posterior region. Epimera III-IV as in *L. australiensis*. Penis small. Two small but well-formed adanal suckers, flanked by a pair of forward copulatory processes conical and carrying fine transverse ridges directed forward. Posterior legs rather long.

Female unknown.

#### Material examined and host information

**Holotype:** MNHR 43F10, parasitic on *Phascogale swainsoni* Waterhouse, 1840, collected in south-western Australia in 1895. Host registration MHNP 450.

**Paratypes:** collected from the same

**Paratypes:** collected from the same animal as holotype, IMT, one male. Paratype from *Phascogale flavipes*, Australia (date unknown) IRSNB, one female.

## Genus *Scolonoticus* Fain, 1971

### 1 *Scolonoticus medius* Fain, 1972

This species was originally described from *Sminthopsis crassicaudata*, Australia.

Recently R. Domrow sent to A.F. a female specimen from *Antechinus stuartii* (Melbourne, 29 August 1972).

We have also found five female specimens that we attribute to this species, on *Aerobates pygmaeus* collected in Queensland, 11 July 1893. Host registration HM T657.

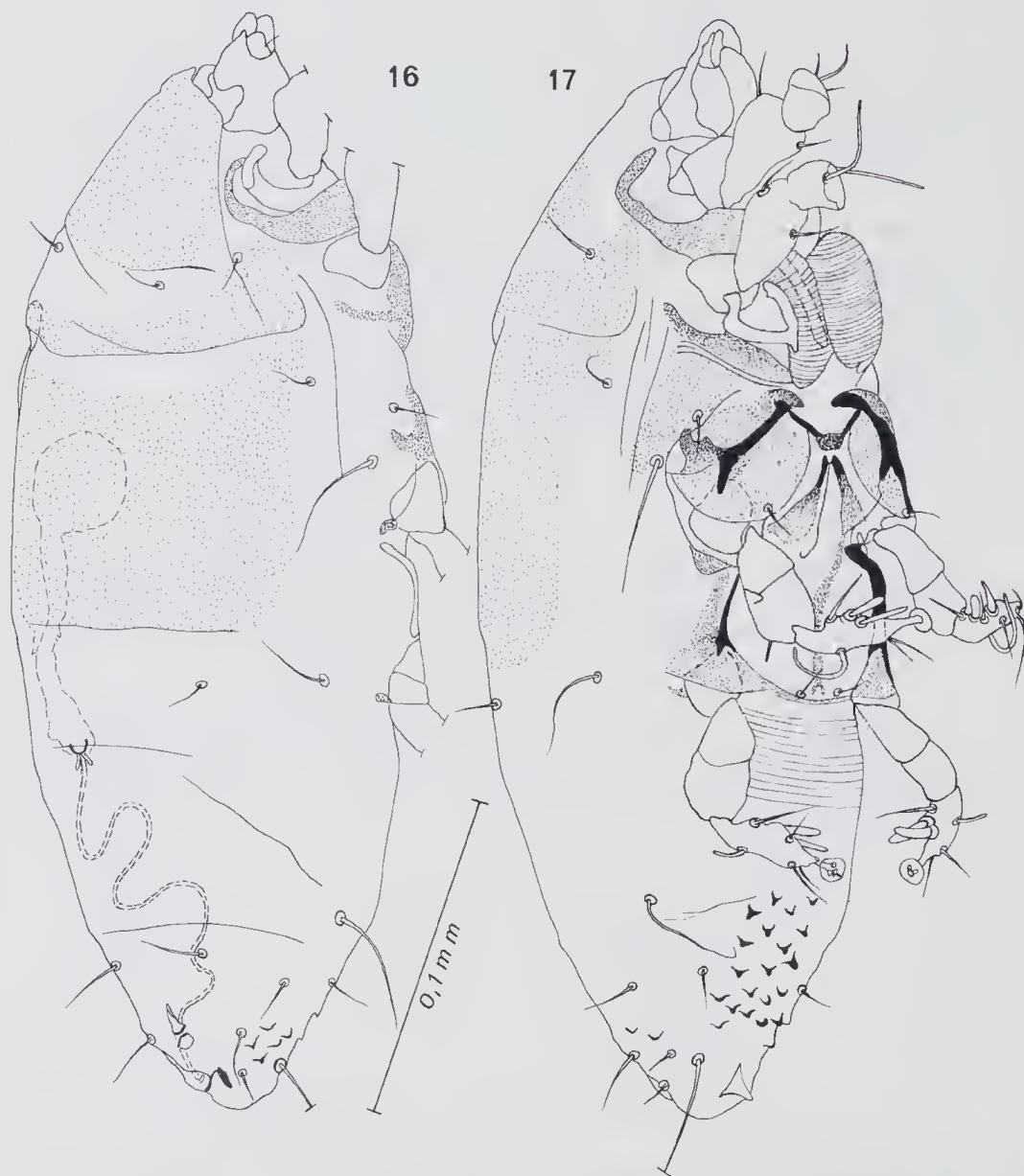


Figs 14-15: *Labidopygus squamatus* sp. nov. Holotype male, in ventrolateral (14) and dorsolateral (15) view.

## 2 *Scolonoticus quasinudus* sp. nov.

### Diagnosis

This species is characterized by the complete absence of scales on the dorsal surface of the body in both sexes.



Figs 16-17: *Scolonoticus quasinudus* sp. nov. Holotype female, in dorsolateral (16) and ventrolateral (17) view.

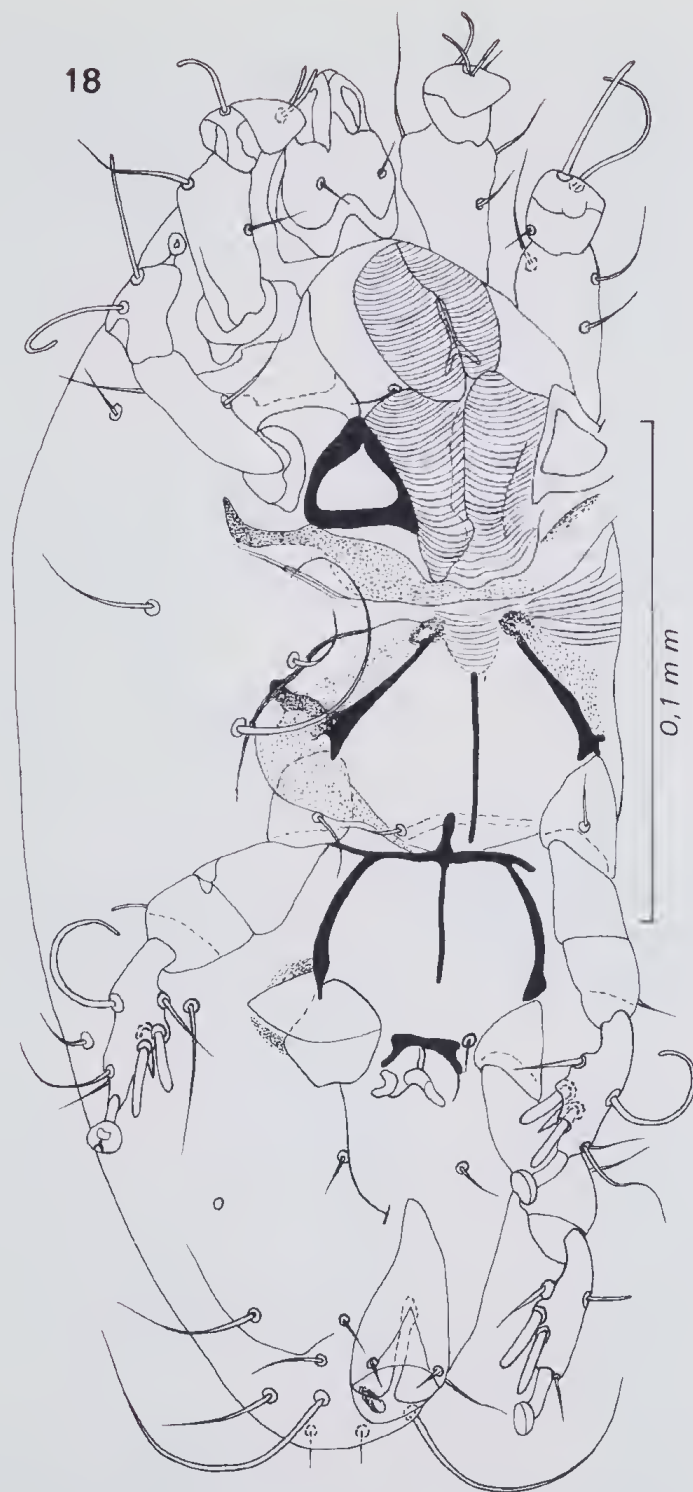


Fig. 18: *Scolonoticus quasinudus* sp. nov. Allotype male.

## Description

**Holotype:** female (Figs 16-17) 332  $\mu\text{m}$  x 126  $\mu\text{m}$  (in lateral view). Dorsal surface covered with poorly sclerotized shields, without any scales. Venter: epimerae united to epigynium by means of punctate band. Opisthosoma bearing a few small scales in its posterior half. Legs III-IV strong; tibio-tarsi with two strong cylindrical setae. Solenidion of tibio-tarsus III at about mid-length of this segment.

**Allotype:** male (Fig. 18) 270  $\mu\text{m}$  x 120  $\mu\text{m}$ . Dorsum as in female. Venter: penis small, situated between legs IV. Adanal discs absent. Cuticular scales absent. Legs IV slightly thicker than legs III, structure as in female.

## Material examined and host information

**Holotype:** HM A75/78, collected from *Petaurus breviceps* Waterhouse, 1839, collected in 'Australia', 29 November 1913. Host registration HM T663.

**Paratypes:** from the same animal, HM, three females, one male; IMT, two females; DZUN, two females.

Genus *Petaurobia* Fain, 1971

*Petaurobia australiana* sp. nov.

## Diagnosis

This species is distinguished from *P. papuana* Fain, 1971 and *P. dactylopsila* Fain, 1971 in the female by the reduction of the scales on opisthonotum and opisthogaster, the longer postscapular shield, and from *P. papuana* by the narrower shape of the bursa copulatrix. The male differs from *P. papuana* by the smaller penis.

## Description

**Holotype:** female (Fig. 19) 390  $\mu\text{m}$  x 145  $\mu\text{m}$  (one paratype: 350 x 140  $\mu\text{m}$ ). Dorsum: propodosomal shield median, entire. Postscapular shield 21  $\mu\text{m}$  long in midline. Seven transverse striations behind this shield. Dorsum punctate behind these striations. Venter: epimerae as in *P. papuana*. Opisthogaster: anterior third finely striated, posterior two-thirds punctate and bearing posteriorly a few very small scales. Bursa very long and narrow. Legs III-IV rather long. Tibio-tarsi III-IV with two cylindrical setae. Solenidion of tibio-tarsus III with solenidion in apical third.

**Allotype:** male (Figs 20-21) 296  $\mu\text{m}$  x 135  $\mu\text{m}$ . Dorsum as in female. Venter: anterior and posterior legs widely separated. Cuticle between these legs with fine transverse striations. Penis small, between legs IV. Legs IV inflated. Legs III as in female.

### Material examined and host information

**Holotype:** WAM 80-324, parasitic on *Petaurus breviceps*, collected at Kalumburu, Western Australia (14°18'S, 126°38'E), 20 June 1960. Host registration WAM M4218 (coll. Douglas).

**Paratypes:** from the same animal, WAM 80-325 and 251, two females and two males; FMNH, three females and two males; IMT, two females and two males; DZUN, two females and one male.



Figs 19-20: *Petaurobia australiana* sp. nov. 19—Holotype female in lateral view; 20—Allotype male in dorsal view.

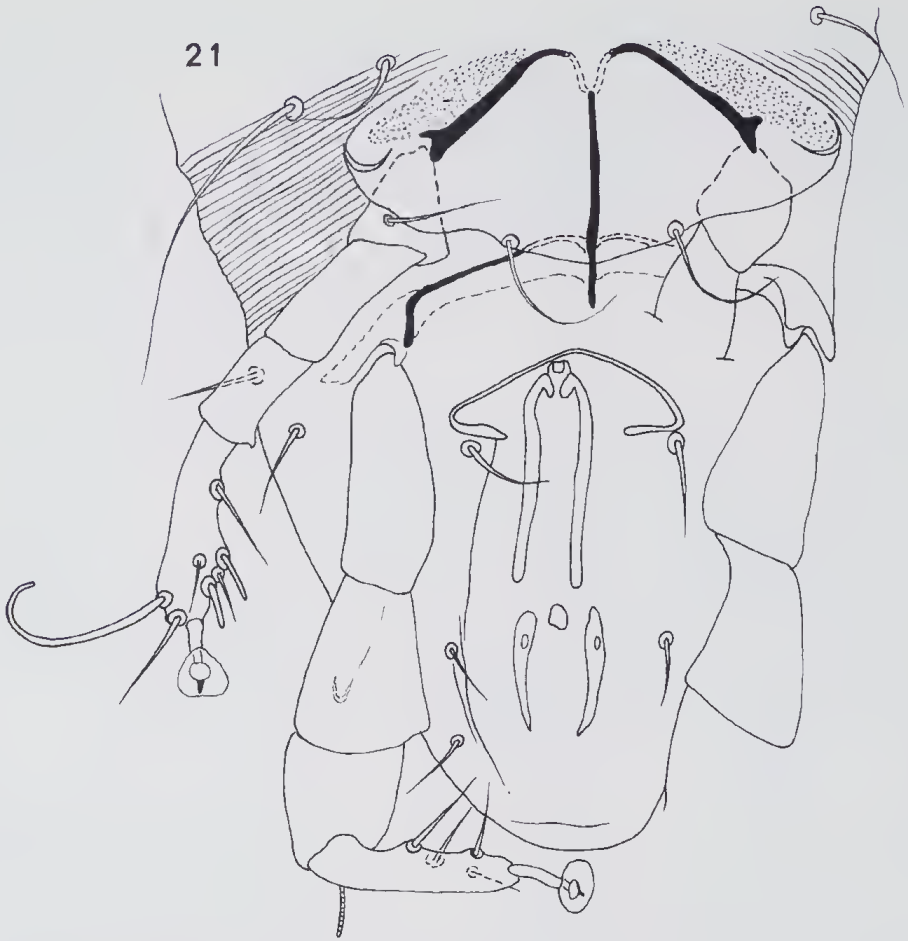


Fig. 21: *Petaurobia australiana* sp. nov. Allotype male, hysterosoma in ventral view.

Genus *Campylochirus* Trouessart, 1893

Subgenus *Campylochiroides* Fain, 1971

1 *Campylochirus* (*Campylochiroides*) *petauricola* Fain, 1972

The holotype of this species was described from *Petaurus papuanus*, New Guinea, the allotype female from *Petaurus breviceps*, Gippsland, Australia, but it now appears that the two specimens are not conspecific. Recently, F.S.L. found on *P. papuanus*, Elat Gross Kei, Irian Jaya, males that are identical to the holotype of *C. petauricola* but females that differ distinctly from the allotype described from *P. breviceps*. These females are now described here the true female of *C. petauricola*. Moreover, from *P. breviceps*, Wandandian, New South Wales, we collected females identical to the

allotype of *C. petauricola* which do not correspond with the holotype of this species. These, in turn, are described herein.

## Description

Female (Figs 22-23): body 340  $\mu\text{m}$  x 105  $\mu\text{m}$  (in lateral view). Dorsum: two pairs of propodosomal shields clearly separated in midline. Behind these shields are two other long punctate shields. Posterior part of dorsum with a few small rounded scales. Internal sclerite of bursa thin, without hair-like formations and without pair of small rounded sclerites. Copulatory orifice 25  $\mu\text{m}$  from posterior extremity. Venter: posterior half of opisthogaster with small rounded scales. Legs III-IV subequal, reaching about to mid-length of opisthosoma.

Male: described by Fain (1972).

## 2 *Campylochirus* (*Campylochiroides*) *brevicepsicola* sp. nov.

*Campylochirus* (*Campylochiroides*) *petauricola* Fain, 1972: 131 (in part)

## Diagnosis

This species is distinguished from *C. petauricola* by two characters: (1) the shape of the internal sclerite of the bursa which is wide, with several hair-like formations apically and two very small globulose sclerites basally; (2) the greater number of scales on the posterior part of opisthonotum.

## Description

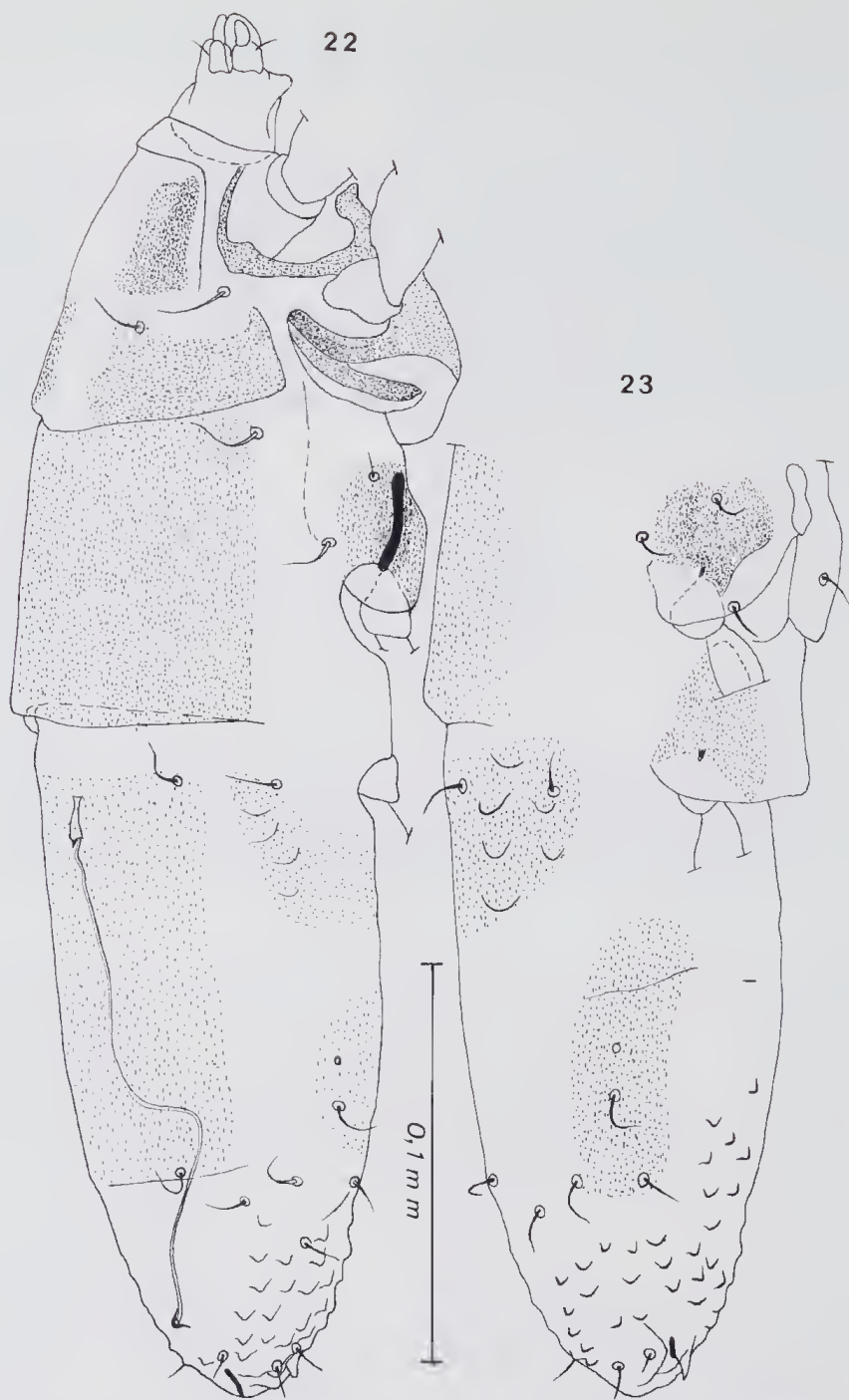
Holotype: male (Figs 24-25) 300  $\mu\text{m}$  x 114  $\mu\text{m}$  (in ventral view). Dorsum as in *C. petauricola*. Venter: propodosoma, epimerae III and coxae III as in *C. petauricola*. Opisthosoma rounded posteriorly, without membranes. Penis very progressively attenuated and about 90  $\mu\text{m}$  long. Anus flanked by two adanal organs. Legs IV strongly inflated. Tarsi IV slightly reduced, ending in a sucker, smaller than that on tarsi III.

Allotype: female 366  $\mu\text{m}$  x 111  $\mu\text{m}$  (in ventral view) (see Fain, 1972).

## Material examined and host information

Holotype: USNM 3937, collected from *Petaurus breviceps*, at Wandandian. New South Wales, 17 June 1919. Host registration USNM 221.327.

Paratypes: from the same animal as holotype, USNM, 20 males, nine females, five nymphs; IMT, 10 males, four females, two nymphs; DZUN, 10 males, four females and two nymphs.



Figs 22-23: *Campylochirus* (*Campylochiroides*) *petauricola* Fain. Female in dorsal (22) and ventral (23) view (both figures after a specimen from *Petaurus papuana*, Elat Gross Kei, New Guinea).



Figs 24-25: *Campylochirus* (*Campylochiroides*) *brevicepsicola* sp. nov. Holotype male in ventral (24) and dorsal (25) view.

Genus *Cytostethum* Domrow, 1956  
Subgenus *Metacytostethum* Fain, 1971

*Cytostethum (Metacytostethum) tasmaniense* Fain & Domrow, 1974

This species was described from *Bettongia gaimardi cuniculus* (Ogilby), Tasmania.

We attribute to this species a poorly sclerotized male, two males still in their nymphal skin, and nine nymphs all from *Bettongia penicillata*, Busselton, Western Australia, 26 May 1920. Host registration USNM 237902.

Genus *Notoryctobia* gen. nov.

Definition

This genus differs from all other atopomelid genera in both sexes by the pseudosegmentation of tibio-tarsi III and IV, which present a median annular constriction forming a pseudoarticulation. Only one rather large well-sclerotized, median prescapular shield present. Female with hysteronotum and opisthogaster scaly without shields. Male with hysteronotum scaly, with a pair of lateral longitudinal shields on the opisthosoma; with a pair of very small but apparently normally formed adanal suckers.

Type species: *Notoryctobia notoryctes* sp. nov.

Evolution of the genus *Notoryctobia*

This genus presents a mixture of primitive and evolved (regressive) characters, but the former seem more important than the latter. As primitive characters we list: (1) the structure of the tibio-tarsi III and IV which are incompletely fused; (2) the great development and the median situation of the prescapular shield; (3) the rather great development of the chaetotaxy; and (4) the basal situation of the solenidion of tibio-tarsi III-IV. As evolved characters we note the absence of postscapular and hysterosomal shields in the female.

*Notoryctobia notoryctes* sp. nov.

Description

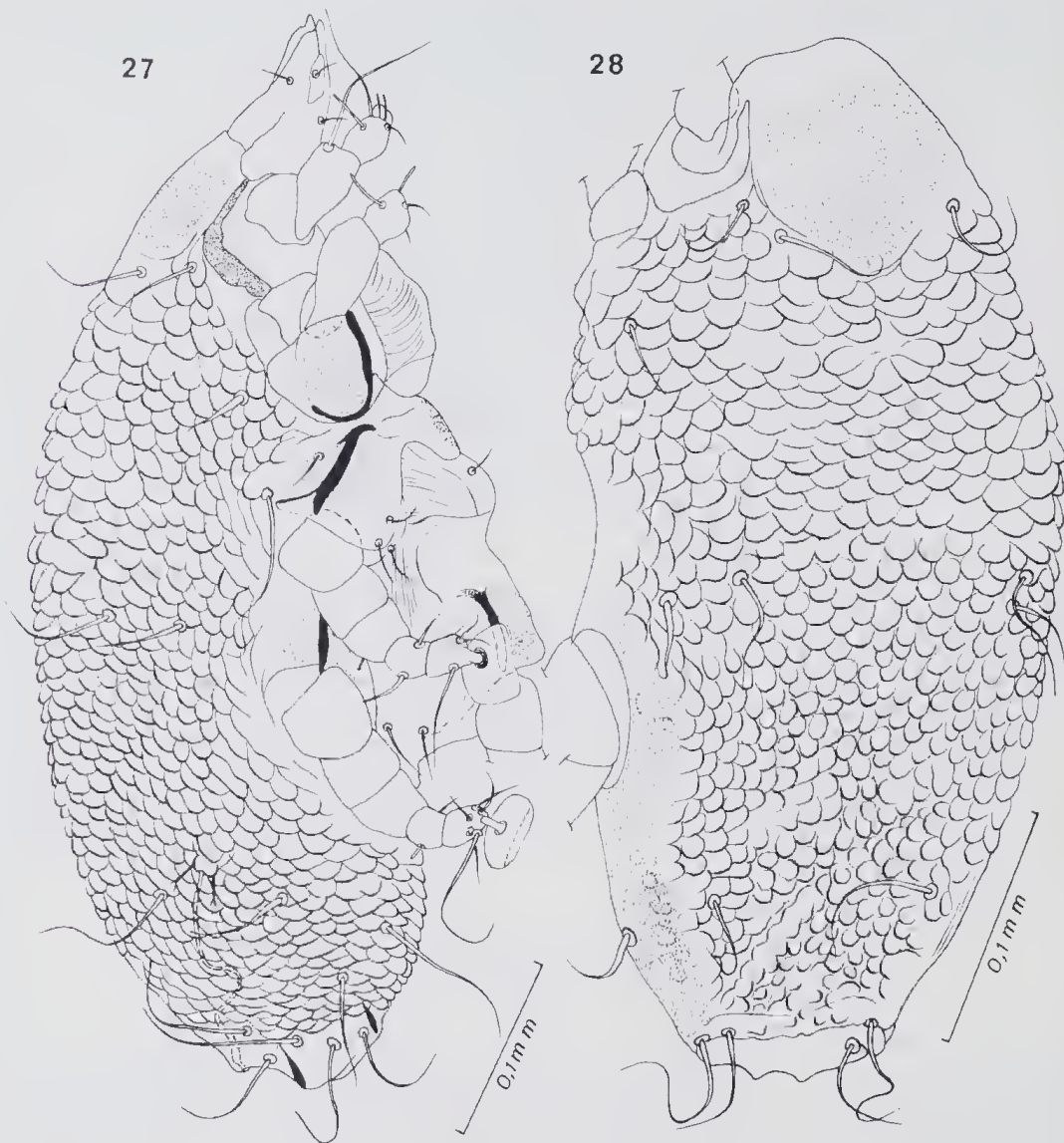
**Holotype:** male (Figs 26, 28) 480  $\mu$ m x 192  $\mu$ m (ventral view). Posterior extremity truncate. Dorsum: completely squamous except for punctate median shield anteriorly and elongate punctate shields postero-laterally. Venter: epimera III and IV fused in midline. Anus flanked by a pair of small suckers. Genital organ short and thick, strongly sclerotized. Legs IV much stronger than III. Solenidion of leg III situated on basal half of tibio-tarsus.



Fig. 26: *Notoryctobia notoryctes* sp. nov. Holotype male.

All legs ending in sucker, those on posterior legs very large. Gnathosoma strongly attenuated at front.

Allotype: female (Fig. 27) 560  $\mu\text{m}$  x 245  $\mu\text{m}$ . Dorsum as in male. No opisthosomal lateral shields. Venter: opisthogaster covered with rounded scales. Posterior legs well developed, tibio-tarsi and apical suckers as in the male. Bursa opening at 30-40  $\mu\text{m}$  behind the anus. Chaetotaxy: idiosoma enlarged basally, with setae 40-100  $\mu\text{m}$  long.



Figs 27-28: *Notoryctobia notoryctes* sp. nov. 27—Allotype female; 28—Holotype male (in lateral view).

### Material examined and host information

**Holotype:** WAM 80-332, parasitic on *Notoryctes typhlops* (Stirling, 1889), collected at Warburton Range, Western Australia (26°06'S, 126°40'E), in 1968. Host registration WAM 7711 (coll. T. Carr).

**Paratypes:** from the same animal as holotype, WAM 80-257 and 80-258, one male, one female, three nymphs; FMNH, two males, one female, three nymphs; IMT, two males, one female, two nymphs; DZUN, one male, one female, three nymphs. Paratypes from the same host, from South Australia, 20 October 1968: HM, two females; host registration HM 815. From the same host, in Charlotte Waters, Central Australia; BM, one female 1980.5.20.3, one male 1980.5.20.4. Host registration BM 97.11.3.13.

### Genus *Murichirus* Fain, 1971

The genus *Murichirus* is now represented by 16 species, of which 12 are endemic to New Guinea, three to Australia and one to both areas. It is found on both murid rodents (13 species) and marsupials (three species), and is divided into two subgenera: *Murichirus* Fain, 1971 and *Murichiroides* Fain, 1971.

#### 1 *Murichirus (Murichirus) petaurus* sp. nov.

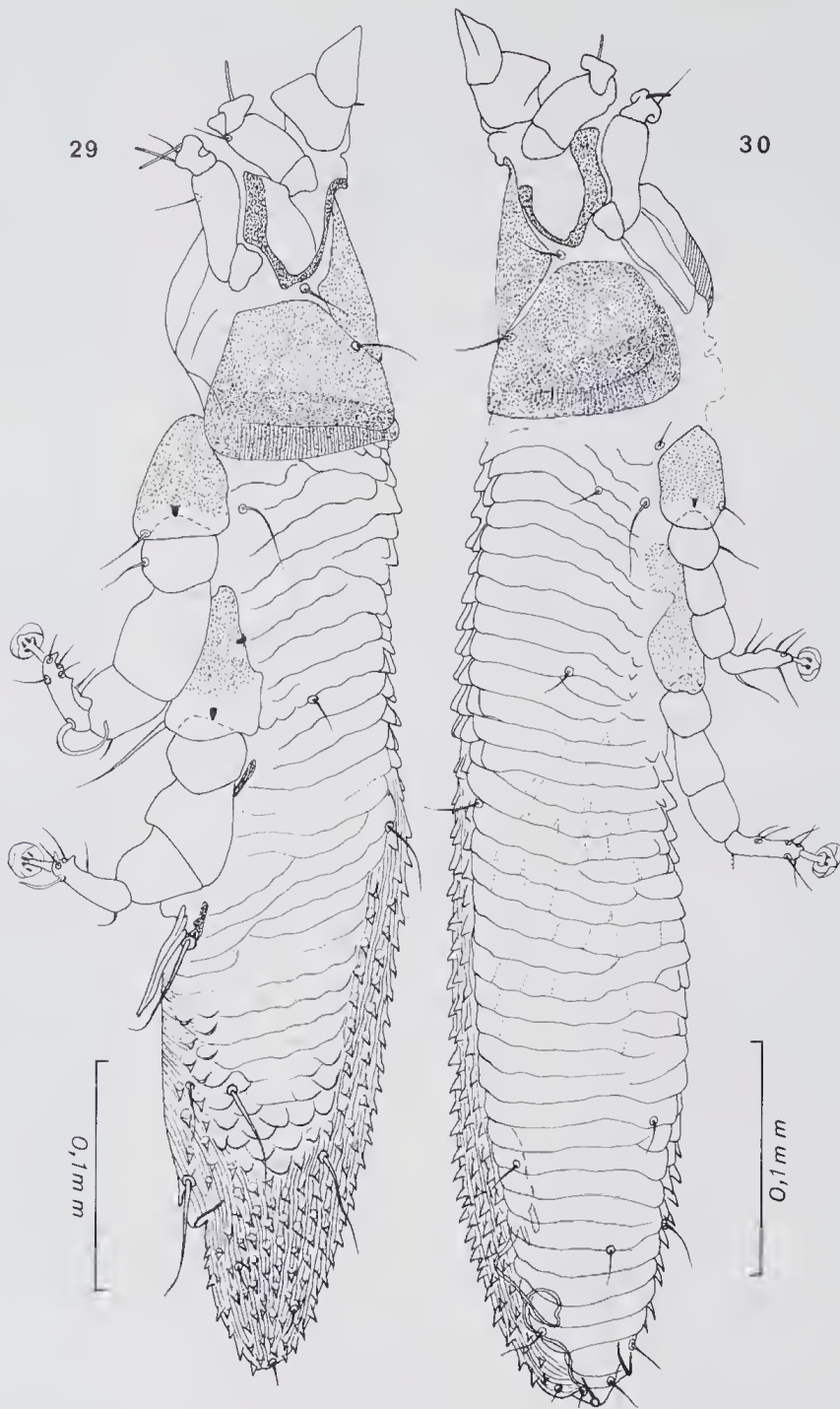
This new species is characterized in both sexes by the absence of a shield in the anterior part of the hysteronotum and the presence of numerous scales on the hysterosoma, mainly on the opisthonotum. In the male the penis is close to coxae IV.

**Holotype:** male (Fig. 29) body 570  $\mu\text{m}$  x 100  $\mu\text{m}$  (in lateral view). Pre- and postscapular shields strongly sclerotized. Hysterosoma: anterior part striated laterally and scaly in midline, opisthosoma with anterior half striated laterally, are scaly elsewhere. Penis strong, situated near coxae IV and strongly sclerotized. Anus ventral, situated in posterior third of opisthogaster. Legs III-IV stout, legs IV slightly thicker than III.

**Allotype:** female (Fig. 30) body 605  $\mu\text{m}$  x 105  $\mu\text{m}$ . Dorsal shields as in male. Hysterosoma with lateral surfaces striated, dorsal and ventral parts scaly. Bursa rather long and twisted. Copulatory orifice immediately behind anus, which is large and subterminal (ventral). Legs relatively short, IV not reaching mid-length of opisthosoma.

### Material examined and host information

**Holotype:** USNM 3938, parasitic on *Petaurus breviceps*, collected at Wandandian, New South Wales, 17 June 1919. Host registration USNM 221.327 (coll. C.M. Hoy).



Figs 29-30: *Murichirus petaurus* sp. nov. 29—Holotype male; 30—Allotype female, in lateral view.

Paratypes: from the same animal, USNM, one female, one nymph; IMT, one female.

## 2 *Murichirus (Murichirus) notomys* Fain, 1971

We attribute to this species one male and one female found on *Cercartetus concinnus* Gould, 1845, Israelite Bay, Western Australia (33°37'S, 123°53'E), 31 May 1968. Host registration WAM 8668.

As the type host of this species is a murid rodent, its presence on a marsupial was probably accidental.

Genus *Listrophoroides* Hirst, 1923

Subgenus *Marquesania* Womersley, 1943

### *Listrophoroides (Marquesania) queenslandicus* Womersley, 1943

The type series of this species was described from murid rodents (including *Rattus youngi*).

Domrow (1958) recorded it from several Australian murids and Fain (1972) on a marsupial, *Phascogale unicolor*, in New South Wales. F.S.L. found five males and three females on a marsupial *Cercartetus concinnus*, from Israelite Bay, Western Australia (33°37'S, 123°53'E), 31 May 1968. Host registration WAM 8668.

It appears from these findings that this species is able to live on both murids and marsupials unless its presence on museum specimens was accidental.

## ACKNOWLEDGEMENTS

This paper results from the joint Field Museum of Natural History (Chicago) and Western Australian Museum field programme in Western Australia during 1976-77. The participation of the junior author in the work of the mammal group was made possible by the generous gift of William S. and Janice Street, Ono, Washington, U.S.A. and with the aid of grant R87-111 by Netherlands Organization for the Advancement of Pure Research (Z.W.O.). Field identifications of hosts have been controlled and corrected by D.J. Kitchener, Western Australian Museum, Perth.

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